

**Trombicula sylvestris sp. nov. (Acarina,  
Trombiculidae) from Malaya**

By J. R. AUDY<sup>1</sup> and ROBERT TRAUB<sup>2</sup>

Among a number of new species of trombieulid mites collected by the Colonial Office Scrub Typhus Research Unit and by the U.S. Army Scrub Typhus Unit in Malaya is a species of *Trombicula* Berlese, 1905, which is here described because of its close relationship to the vectors of scrub typhus (tsutsugamushi disease).

***Trombicula sylvestris* sp. nov.**

Near *T. akamushi* (Brumpt) and *T. deliensis* Walch, the vectors of scrub typhus, but distinct from these in being much larger, white instead of pink or reddish, in having a characteristic deep and large scutum, and palpal claws with two fairly long and slender claws. Leg III of the new species is about 410 $\mu$  in length as compared with about 220 $\mu$  for leg III of *T. akamushi* from the same area. The posterior width of the scutum of the new species is 15 $\mu$  to 20 $\mu$  greater than that of *T. akamushi* from Malaya.

*Description of Larva* (Plates 8, 9, 10). *Body*: ovate, eutiele covered with faint striae; mounted engorged specimens about 1 mm. long and 0.6 mm. wide. *Dorsal plate (scutum)*: large and about 64 $\mu$  deep; anterior margin slightly sinuate; lateral margins somewhat eoneave, conspicuously curving outwards closely round the bases of the posterolateral setae; posterior margin convex and somewhat flattened medially; closely and fairly coarsely punctate except round the base of the anteromedian seta. Sensillae setiform with a frayed outer third. Sensillary bases only slightly anterior to the line of the posterolateral setae; pits 10 $\mu$  diameter. Anterolateral setae slightly longer than anteromedian seta, with closely adpressed branches. Posterolaterals slightly stouter and much longer but with similar branches. *Eyes*: extremely difficult to see, apparently double. *Chelicerae*: fairly stout, with a short tricuspid cap; a small ventromedian denticle is sometimes visible. *Palp*: palpal claw bifurcate, the outer prong being the narrower; an occasional specimen with a rudiment of a third, basal, prong. Palpal

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setae on segments 2 to 4 nude, with the exception of the antero-dorsal seta on segment 4 (tibia) which is branched. Palpal tarsus longer than broad at base, usually with 5 plumose setae, one almost unbarbed seta, and a stout spur. *Galea*: with a plumose proximal ventral seta. *Dorsal setae*: similar to antero-laterals, 32-36 in number, usually arranged in rows 2, 8, 6, 6, 4, 4, 2; the lateral setae of the first row of 8 being some 6 $\mu$  longer than the others. *Ventral setae*: about 34 in number, smaller than the dorsals and more pectinate, grouped behind two pairs of plumose sternal setae. *Coxae*: punctate, unisetose, with plumose setae. *Legs* with 7 segments. Sensory setae as follows: Leg I with 2 genualae and 1 microgenuala distally; 2 tibialae and 1 stout microtibiala, all close together; spur, microspur lateral to spur, subterminala, parasubterminala, pretarsala. Leg II with genuala, 2 tibialae in line, spur, microspur, and pretarsala. Leg III with genuala and tibialae. Genu III with a thick, blunt, spur-like process on the dorsum of the distal edge.

### Standard Measurements

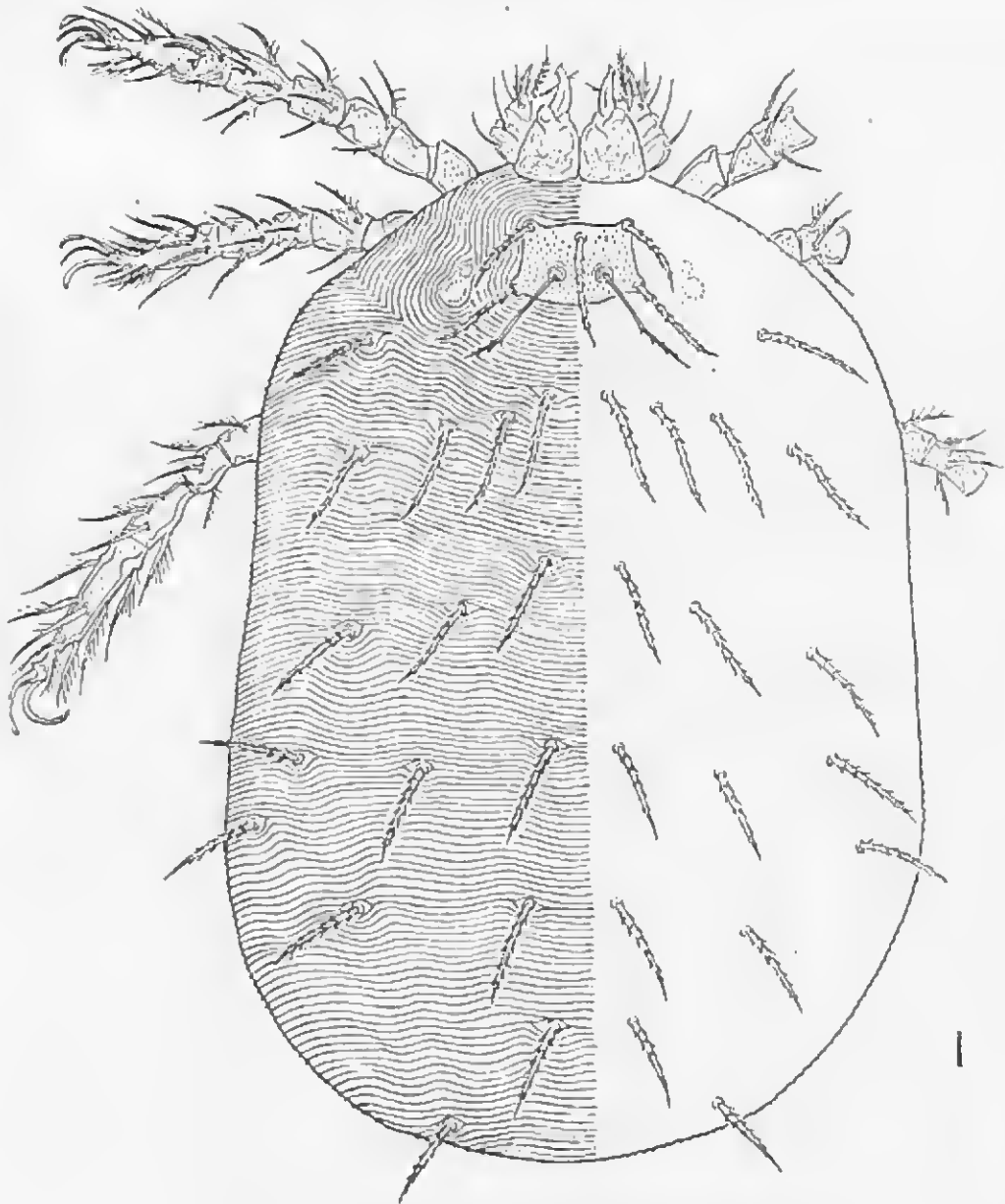
Standard measurements of *Cotypes* of *T. sylvestris* sp. nov.

Measurements in microns, symbols as in Womersley and Heaslip 1943.

Specimen	AW	PW	AP	SB	ASB	SD	AM	AL	PL	S	DS	
14294 ..	..	81	100	46	43	48	67	80	64	90	89	87
14295 ..	..	77	100	40	40	48	65	78	65	96	..	88
14296 ..	..	80	97	45	40	48	63	80	68	91	..	88
14297 ..	..	70	95	45	38	48	64	65	61	95	80a.	81
14298 ..	..	74	95	50	39	46	64	..	60	88	..	80
14299 ..	..	77	97	44	40	48	66	..	60	86	90	81
14300 ..	..	79	95	47	40	48	66	71	77	88	80	86
14301 ..	..	89	100	46	41	50	69	78	63	93	91	89
14302 ..	..	79	100	44	42	48	66	75	60	86	93	87
14303 ..	..	75	96	42	40	47	67	60+	60c.	90	80	81
14304 ..	..	78	96	42	40	48	68	60+	60	97	..	87
14305 ..	..	76	95	..	30	40	60	76c.	64	91	86a.	88
14306 ..	..	76	96	41	39	45	65	72	60	92	90+	84

*Type Material.* Thirteen cotypes deposited in the Raffles Museum, Singapore, the British Museum (Natural History), the U.S. National Museum, and the South Australian Museum. Type host: *Rattus sabanus vociferans* (Miller).

*Locality and Hosts.* All specimens so far seen have been from one locality, the Ulu Langat Forest Reserve a few miles to the east of Kuala Lumpur. In November and December 1949, 53 specimens of the mite were collected from 13 out of 50 specimens of *Rattus sabanus* examined, and 5 others from 2 out of 26 *Rattus mülleri* examined, all from the same area.



*Trombicula sylvestris* sp. nov., dorsal aspect of larva.

*Trombicula sylvestris* sp. nov.  
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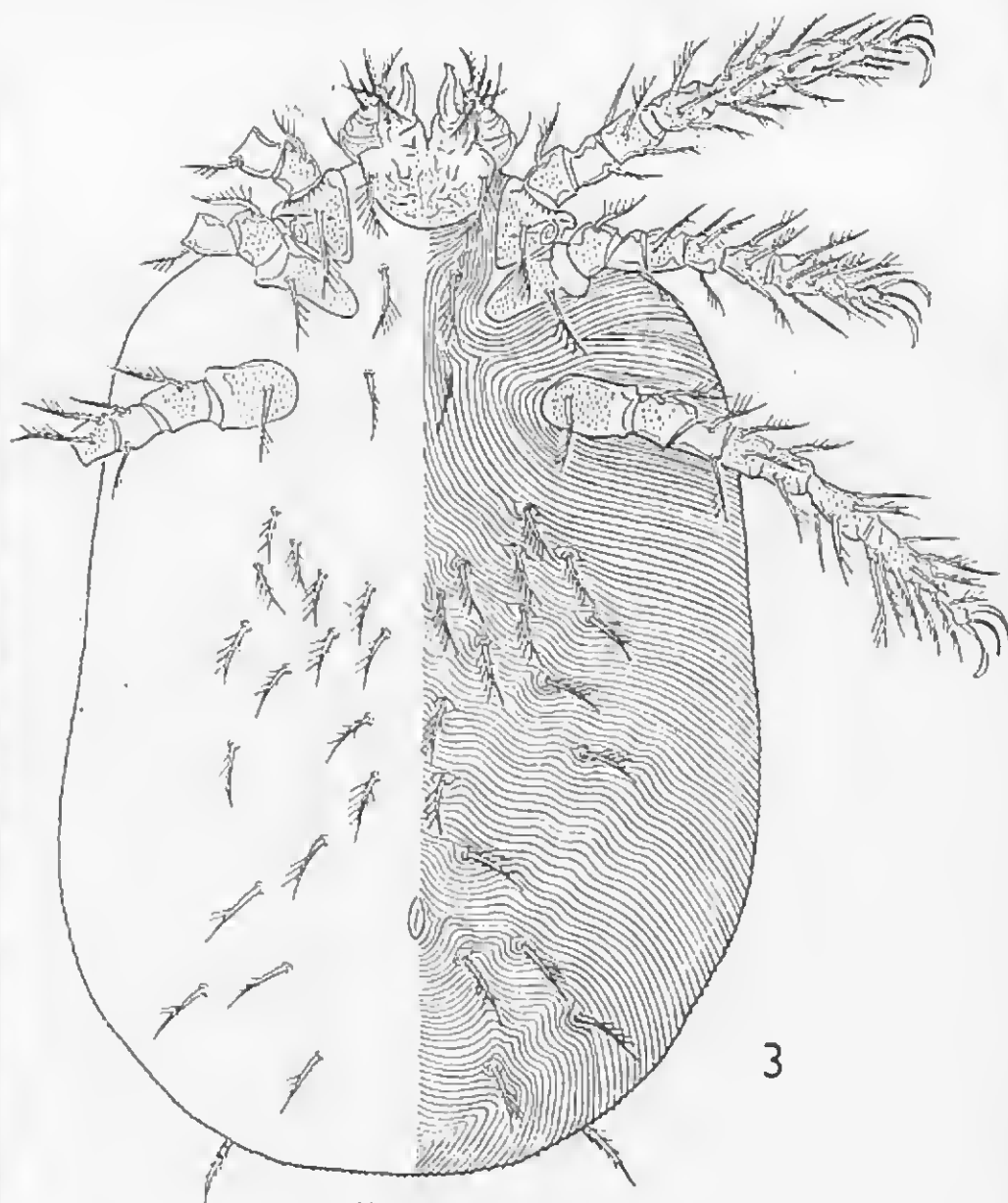
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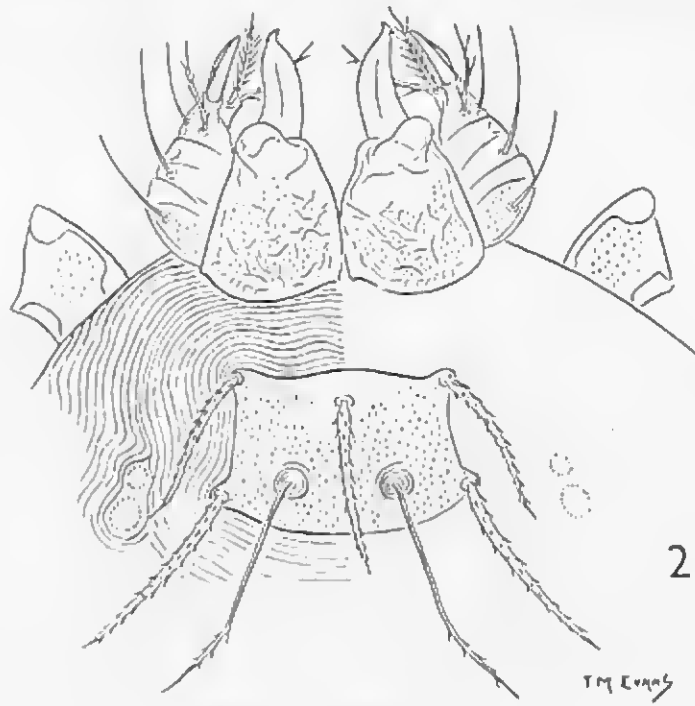
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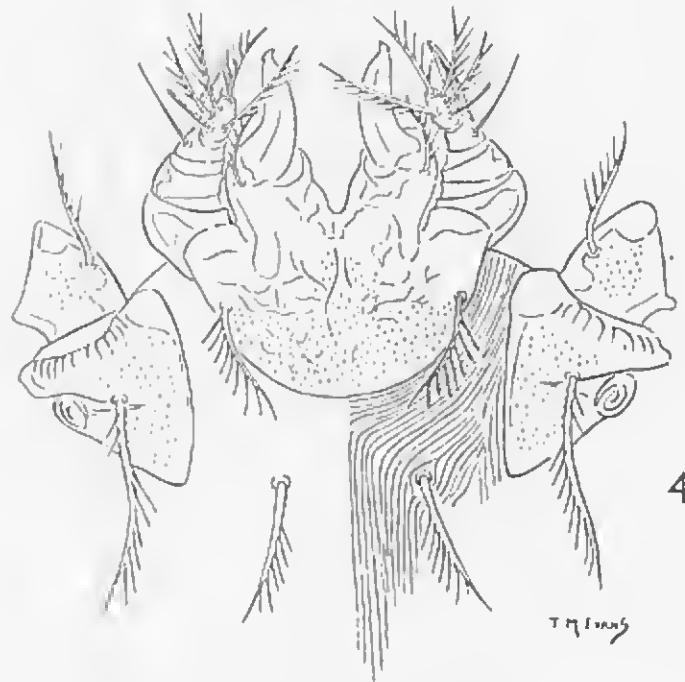


Ventral aspect of larva

*Trombicula sylvestris* sp. nov.  
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Details of anterior dorsal region



Details of anterior ventral region

*Trombicula sylvestris* sp. nov.  
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sp. nov.  
(sub)

## TROMBICULA SYLVESTRIS

Considerable collections from three nearby forest reserves have yielded other members of *T. akamushi*-group but not *T. sylvestris*. Both *Rattus sabanus* and *Rattus mülleri* are giant rats, and collections by the Colonial Office research unit have shown that these giant rats are the primary host of trombiculids of the *T. akamushi*-group in Malaya.

*Remarks.* Sufficiently extensive collections have recently been made in Malaya for us to feel confident that this species is a native of the Malayan rain forest, and the name *sylvestris* has been given to stress this relationship. It appears to be local in distribution, and it is probably almost confined in its host-relationships to the giant rats of the forest. Particularly on the basis of the chaetotaxy of the legs and palps, we place this species in the *T. akamushi* species-group.

We are indebted to Mr. H. Womersley for having compared the new species with material in the collections of the South Australian Museum, and to Mr. Thomas Evans of the Army Medical Department Research and Graduate School, Washington, for having drawn the illustrations from two of the cotypes (Nos. 14300 and 14302).

### Reference

- WOMERSLEY, H., and HEASLIP, W. G., 1943. The Trombiculinae or itch-mites of the Austro-Malayan and Oriental regions. *Trans. roy. Soc. S. Aust.*, 67, 68-142.

### PLATES 8, 9, 10

- Fig. 1. *Trombicula sylvestris* sp. nov., dorsal aspect of larva.  
Fig. 2. Ibid, details of anterior dorsal region.  
Fig. 3. Ibid, ventral aspect.  
Fig. 4. Ibid, details of anterior ventral region.